That which is claimed is:

1. A system for sound cancellation comprising:

a source microphone for detecting sound;

a speaker for broadcasting a canceling sound with respect to a cancellation location, and

a computational module in communication with the microphone and the speaker, the computational module configured to receive a signal from the microphone, identify a cancellation signal using a predetermined adaptive filtering function responsive to an acoustic environment of the cancellation location, and transmit a cancellation signal to the speaker.

2. The system of Claim 1, further comprising a training sub-system having at least one training microphone that can be placed at the cancellation location.

3. The system of Claim 1, further comprising a temperature sensor in communication with the computational module, wherein the predetermined adaptive filtering function is responsive to the temperature of the acoustic environment.

4. The system of Claim 2, wherein the predetermined adaptive filtering function is determined by receiving a first sound input from the source microphone, receiving a second sound input from the training microphone, and then determining the adaptive filtering function, wherein the predetermined adaptive filtering function is adaptive to a sound transformation between the source microphone signal and the training microphone signal.

5. The system of Claim 1, wherein the predetermined adaptive filtering function comprises a function that identifies a sound transformation between the source microphone and the cancellation location without contemporaneous sound input at the cancellation location.

6. The system of Claim 4, wherein the cancellation location is spatially removed from the source microphone and speaker.

7. The system in Claim 1, wherein the source microphone comprises a plurality of source microphones.

8. The system of Claim 1, further comprising at least one locating sensor.

9. The system of Claim 8, wherein the locating sensor is configured to determine a location of a subject.

10. The system of Claim 9, wherein the predetermined adaptive filtering function determines an approximate sound transformation as a function of the location of the subject.

11. The system of Claim 8, wherein the locating sensor is configured to determine a location of a sound source.

12. The system of Claim 11, wherein the adaptive filtering function determines an approximate sound transformation at a cancellation location based on the location of the sound source.

13. The system of Claim 8, further comprising at least one locating sensor configured to determine a location of a sound source, wherein the adaptive filtering function comprises a function that determines an approximate sound transformation at the location of the subject based on the location of the sound source.

14. The system of Claim 1, wherein the speaker is a parametric speaker for broadcasting ultrasonic sound, the parametric speaker configured to broadcast a localized cancellation sound at the cancellation location.

15. The system of Claim 1, wherein the speaker comprises a plurality of speakers.

16. The system of Claim 1, wherein the computational module further comprises a screening module that can analyze signals from the source microphone

for indications of a health condition comprising at least one of: sleep apnea, pulmonary congestion, pulmonary edema, asthma, halted breathing, abnormal breathing, arousal, and disturbed sleep.

17. The system of Claim 16, wherein the computational module further comprises:

a communicating module configured such that, if the screening module detects a health condition, the communicating module communicates the detection of a health condition, and

wherein the communicating module comprises at least one of: an optical display, an acoustic mechanism, an alphanumeric display, a wire, optical fiber, wireless, Internet, and removable memory storage.

18. A method of sound cancellation comprising:

detecting a sound input;

identifying a cancellation signal for the sound input with respect to a cancellation location using a predetermined adaptive filtering function; and

broadcasting a cancellation sound for canceling sound proximate the cancellation location.

19. The method of Claim 18, further comprising training an algorithm to provide the adaptive filtering function.

20. The method of Claim 19, wherein the training algorithm comprises the steps of:

detecting a first sound at a first location;

detecting a modified second sound at a second location, the modified second sound being a result of sound propagating from the first location to the second location; and

determining the adaptive filtering function, the adaptive filtering function approximating the second modified sound from the first sound.

21. The method of Claim 20, further comprising obtaining a second signal using a training system comprising at least one microphone, the training system being

at least one of: head-wearable device and positionable at desired location of cancellation.

22. The method of Claim 21, further comprising providing a training device comprising a head surrogate comprising a three dimensional object and at least one microphone.

23. The method of Claim 18, further comprising analyzing the sound input for medical screening purposes.

24. A method for canceling sound, comprising:

detecting first sound at a first location;

detecting a modified second sound at a second location, the modified second sound being a result of sound propagating to the second location;

determining an adaptive filtering function, the adaptive filtering function approximating the second modified sound from the first sound;

halting detecting of the modified sound; and

determining a cancellation signal proximate the second location from the first sound and the adaptive filtering function.

25. A method for canceling sound, comprising:

detecting a first sound at a first location;

detecting a modified second sound at a second location, the modified second sound being a result of sound propagating to the second location; and

determining an adaptive filtering function, the adaptive filtering function approximating the second modified sound from the first sound.

26. A method for analyzing sound for health conditions, comprising:

providing a microphone spatially remote from a subject;

analyzing a sound input to the microphone for indications of a health condition comprising at least one of: sleep apnea, pulmonary congestion, pulmonary edema, asthma, halted breathing, abnormal breathing, arousal, and disturbed sleep.

27. A system for sound cancellation comprising:

a source microphone for detecting sound; and

a parametric speaker configured to transmit a canceling sound that is localized with respect to a cancellation location.

28. The system of Claim 27, wherein the parametric speaker produces the canceling sound with an interaction between two or more ultrasonic signals.

29. The system of Claim 27, wherein the parametric speaker produces the canceling sound by nonlinear interaction of an ultrasonic signal with air.

30. The system of Claim 27, further comprising:

a computational module in communication with the microphone and the parametric speaker, the computational module configured to receive a signal from the microphone, identify a cancellation signal using a predetermined adaptive filtering function responsive to an acoustic environment of the cancellation location; and transmit a cancellation signal for producing the canceling sound to the parametric speaker.

31. A method for canceling sound comprising:

detecting a sound; and

transmitting a canceling signal from a parametric speaker that locally cancels the sound with respect to a cancellation location.

32. The method of Claim 31, wherein transmitting a canceling signal further comprises transmitting a plurality of ultrasonic signals wherein the canceling signal is formed from the interaction of the plurality of ultrasonic signals.

33. The method of Claim 31, wherein the canceling signal is formed from a nonlinear interaction of an ultrasonic signal with air.

34. The method in Claim 31 wherein the canceling signal is formed from an interaction between a plurality of ultrasonic signals that creates a difference signal among the ultrasonic signals at the cancellation location.

35. The method in Claim 31 wherein the ultrasonic signal comprises a carrier frequency component and a modulation component and nonlinear interaction between the carrier frequency component and the modulation component in air creates a cancellation sound by demodulation of the ultrasonic signal that is in a generally audible frequency range along the propagation path of the ultrasonic signal.

36. The method of Claim 31, further comprising:

determining an adaptive filtering function, the adaptive filtering function approximating the sound propagation to the cancellation location; and

identifying the canceling signal by applying the adaptive filtering function to the detected sound.